1. (Amended) A glass matrix composition consisting essentially by mol percent of:

$57 < SiO_2 < 75$;

$5 < BaO < 25$; and

$2 < MgO < 18$, said composition having the characteristics of being chemically resistant to oxidizing and reducing conditions encountered in sealing solid oxide fuel cells and the matrix composition remaining in a glassy state after sealing at temperatures up to 1300°C.

G1

2. (Amended) The glass matrix composition of claim 1, consisting essentially by mol percent of:

$67 < SiO_2 < 75$;

$10 < BaO < 20$; and

$7.5 < MgO < 12.5$.

3. (Amended) A glass matrix-ceramic particulate composite consisting essentially of:

a glassy phase consisting of (by mol percent)

$57 < SiO_2 < 75$;

$5 < BaO < 25$;

$2 < MgO < 18$, said composition having the characteristics of being chemically resistant to oxidizing and reducing conditions encountered in sealing solid oxide fuel cells and the matrix composition remaining in a glassy state after sealing at temperatures up to 1300°C; and

between 15 and 40% by weight (between 5 and 30 mol percent) of a forsterite phase consisting of Mg_2SiO_4.

4. (Amended) The glass matrix-ceramic particulate composite of claim 3, consisting essentially of:

a glassy phase consisting of (by mol percent)

$67 < SiO_2 < 75$;

$10 < BaO < 20$;

$7.5 < MgO < 12.5$; and

between 20 and 35 percent by weight (between 10 and 25 mol percent) of a forsterite phase consisting of Mg_2SiO_4.

5. (Amended) The glass matrix composition of claim 1, consisting essentially by mol percent of:

$57 < SiO_2 < 75$;

$5 < (BaO + SrO) < 25$; and

$2 < MgO < 18$, said composition having the characteristics of being chemically resistant to oxidizing and reducing conditions encountered in sealing solid oxide fuel cells and the matrix composition remaining in a glassy state after sealing at temperatures up to 1300°C.

6. (Amended) The glass matrix-ceramic particulate composite of claim 3, consisting essentially of:

a glassy phase consisting of (by mol percent)

$57 < SiO_2 < 75$;

$5 < (BaO + SrO) < 25$; and

$2 < MgO < 18$, said composition having the characteristics of being chemically resistant to oxidizing and reducing conditions encountered in sealing solid oxide fuel cells and the matrix composition remaining in a glassy state after sealing at temperatures up to 1300°C; and

between 15 and 45 percent by weight (between 5 and 30 mol percent) of a forsterite phase consisting of Mg_2SiO_4.